### Outcomes

Identified one or more observable, measurable statements of what a student is expected to know or be able to do throughout a program, which will be assessed during this reporting period.

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Learning outcome statements are clear concise statements that specify how students will demonstrate what they will know, or be able to do, upon completion of a program. The statements should reflect the highest levels of skill required by a course(s), or in a program. They are framed in terms of the entire program, not individual course outcomes, which should align with program outcomes. They should include action verbs, which make the outcomes measurable.

Examples of action verbs (ref: Bloom's Taxonomy) include: Summarize, Analyze, Design, Identify, Interpret, Apply, Demonstrate, Evaluate.

An example of a learning outcome statement that uses action verbs is: "Students will be able to apply mathematical reasoning based on definitions, axioms, and theorems to read and write mathematical proofs."

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### Evidence

Identified the evidence* (student work), other than grades**, used to determine whether students achieved stated learning outcome(s) and/or uncover patterns of weakness to address. Use of direct evidence is required. Use of indirect evidence is optional. Mixed methods, which include using both sources of evidence, can enhance the assessment process.

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Both data-collection sources are important, but indirect evidence is not sufficient by itself. The goal is to select methods that provide meaningful information.

**Direct evidence or indicators of student learning:** Reveals what students know in the form of a product or a performance; can include student work such as research papers, embedded questions on assignments or exams across course sections, presentations, performances, capstone projects, portfolio review, certain reflections.

**Indirect evidence or indicators of student learning:** Generally reveals perception, opinion; can include student/alumni surveys, focus groups, some employer surveys, focus groups, and self-reflections.

*Some sources of evidence can often be found in the curricular map, which links program requirements to outcomes.

**Grades in courses or on exams are not typically sufficient evidence unless all program faculty have agreed on key features of the syllabus and rubrics to evaluate students, to ensure the same standards are applied across courses, sections, instructors, and years. Remember, the goal is to determine whether the program is meeting its learning goals for students as defined by the faculty, not whether a student has met a particular instructor's goals. One way to make this work is to use a standardized final assignment in a course, allow for minor variations of content across instructors, and score with a standardized rubric.

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### Action

Identified the method(s) or process(es) used to evaluate student work (i.e., the best means of assessing the work, e.g., rubrics, etc.) and who interprets the evidence.

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Methods selected to evaluate evidence should provide an appropriate and thorough examination of student learning outcomes. For example, a detailed scoring rubric with criteria that differentiates levels of achievement can be developed and used to score student work (e.g., essays, portfolios, recitals, oral exams, performances, etc.).

Generally two raters are used to review each product, and a third rater is used to resolve major discrepancies.

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### Evaluation

Examined student work looking for patterns of weakness to address; indicated sample size; reported the expected and actual levels of student achievement.

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Results thoroughly address the learning outcome(s) assessed and are reported in such a way that results can be understood by persons outside the content area. When quantitative data are part of the evidence, the full results (e.g., in tables) are provided (perhaps in an appendix).

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### Reflection & Planning

Demonstrated how assessment results will be used to contribute to program improvement and enhance student learning:

- summarized findings and made recommendations for change based on these results (e.g., pedagogy, curricular revisions, assessment process);
- suggested a timeframe for implementing change; and
- suggested a timeframe for measuring the impact of the change.

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Results should include what was learned about the effectiveness of the assessment process and how those discussions informed recommendations. What do the results mean for teaching and learning practices? The summary clearly indicates how the program will use what was learned (e.g., make program improvements, further assess learning, improve assessment methods, consider pedagogy or curricular change etc.).